



## **Hidden Valley Lake Fisheries Management Report 2004**



Hidden Valley Lake is a 61-acre Department-owned impoundment situated atop Clinch Mountain in Washington County, Virginia. At normal pool elevation (3,600 feet MSL), the reservoir has a maximum depth of 24 feet and a mean depth of 14 feet. Hidden Valley Lake was formed in 1963 when a smaller dam was renovated and upgraded by the Department. From 1963 to 1979 the reservoir was managed as a put-grow-and-take fishery for brook trout. During the mid-1970's, unauthorized stockings of rock bass and golden shiners altered the fishery, and brook trout introductions were soon discontinued. Adult smallmouth bass were stocked in 1979 and 1980 to control the rock bass and shiner populations. From 1984 to 1988 balanced populations of rock bass, redbreast sunfish (unknown source), and smallmouth bass provided quality fishing opportunities.

The lake was completely drained in November 1988 to facilitate repairs to the primary spillway structure and the emergency spillway. Repairs were completed the following spring, and the lake began filling on July 17, 1989. Efforts to re-establish the fishery began in July 1989. The fish community that became established in the 1990's did not provide very good fishing opportunities. Smallmouth were scarce, less than five per hour when sampling, and redbreast sunfish were over-abundant and stunted at a small size.

Fish stocking has been particularly important as a management tool for Hidden Valley Lake in recent years. Biologists are attempting to re-structure the lake's fish community by stocking largemouth bass and bluegill sunfish. Largemouth and bluegill should reproduce in the lake and establish self-sustaining populations. Channel catfish and Northern pike are stocked into the lake each year, because the lake does not have sufficient spawning habitat for these species.

The current bass regulation is an 18-inch minimum length limit, with a one bass per day creel limit. A 30-inch minimum length limit and two fish per day creel limit are in effect for northern pike. Statewide daily creel limits are in effect for sunfish (50), and crappie (25). These regulations are in place to prevent over harvest.

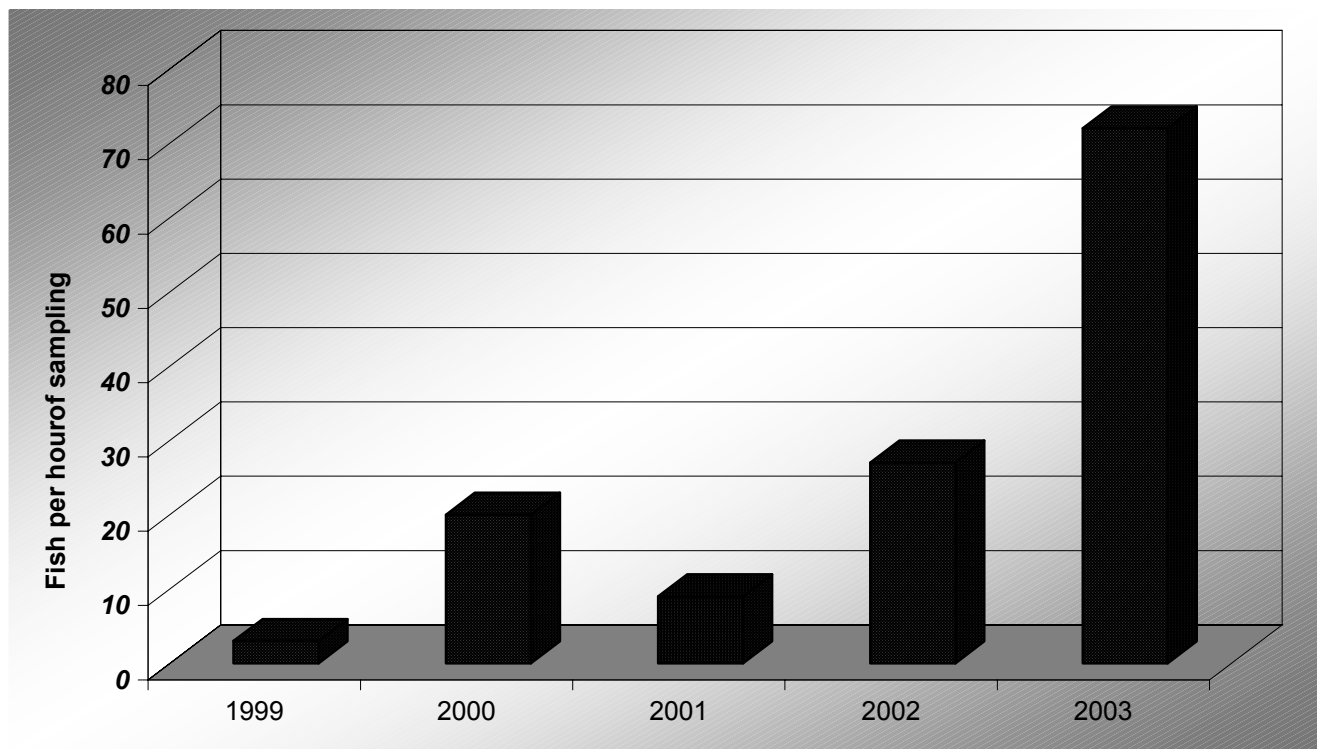
Current fisheries management objectives for Hidden Valley Lake are to increase abundance and size of largemouth bass, to increase the size and abundance of bluegill sunfish and to maintain the black crappie population at a level that provides reasonable numbers of quality size (8 inches) fish. In order to achieve these objectives biologists stock fish as needed, enhance fish habitat, and monitor the fish populations by routine sampling.

Several fish habitat improvements are planned for Hidden Valley Lake in the future. Brush shelters, "slab-habs" (structures built using sawmill slabs) and hinge trees will be added to enhance existing habitat in the lake. Aquatic vegetation is beginning to present some problems. Submerged aquatic vegetation provides very good habitat for fish as long as it does not "take over". Biologists are monitoring the situation and are stocking grass carp periodically as a means of controlling the vegetation.

Fish populations at Hidden Valley Lake are sampled each year in May using boat-mounted electrofishing gear. Fish collected during these population surveys are measured, weighed and released back into the lake. Sampling time is recorded in seconds so that the relative abundance (number of fish collected per hour) can be determined. Biologists get important information about the size structure of the population by looking at the length data. The abundance and size structure data allow biologists to compare the current sample collection to past results, and to the results of samples collected at other lakes.

The fish populations at Hidden Valley Lake have changed considerably since 1999. Although the fishery has not improved to the point that biologists are content, there are some definite signs of improvement.

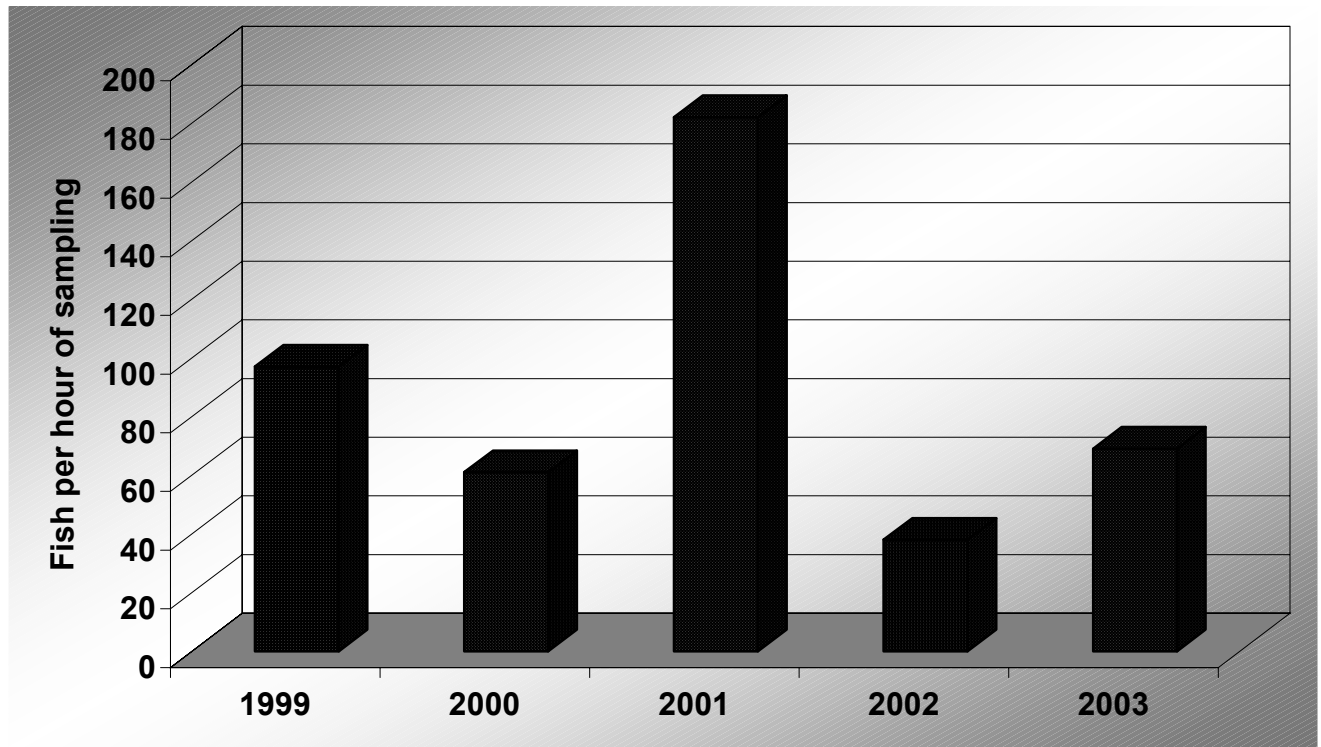
Largemouth bass relative abundance (number collected per hour of sampling) has increased dramatically since 1999 (Figure 1). Excellent collections of young largemouth bass in 2003 indicate that the bass are now reproducing successfully in the lake. Size structure of the largemouth population is also improving. About 10 percent of the adult largemouth bass now exceed 15 inches in length.



**Figure 1.** Number of largemouth bass collected per hour of sampling in Hidden Valley Lake 1999 – 2003.

Bluegills are also increasing in abundance. More importantly, redbreast sunfish catch rates have declined from 125 per hour in 1999 to 14 per hour in 2003. Redbreast sunfish are no longer overabundant. Both of these sunfish populations still do not have a desirable size structure. There are some large individuals available for anglers, but the majority of the fish are small. This is to be expected as the lake's fishery is in a re-building stage.

The biggest fisheries concern at this time is the black crappie population. Black crappie were introduced by an un-authorized source in the mid-1990's. Sample catch rates have fluctuated since 1999, with the last two sample collections yielding more desirable numbers (Figure 2). The size structure of the crappie population has improved somewhat, but 75 percent of the crappie are less than 8 inches long. Crappie size structure may improve as populations of largemouth bass and northern pike grow in size and abundance, and offer some means of controlling this population.



**Figure 2.** Number of black crappie collected per hour of sampling in Hidden Valley Lake 1999-2003.

In summary, Hidden Valley Lake should offer decent fishing for largemouth bass and crappie, although most of the fish caught will be relatively small. Some large individuals are present, and may provide a memorable day for the lucky or skillful angler. Fishing for bluegills and redbreast sunfish is not great at this time, but should get better as population size structure improves. Channel catfish, smallmouth bass and northern pike are present in low numbers and should provide some angling diversity.

Prepared by: Tom Hampton, Fisheries Biologist with the Virginia Department of Game and Inland Fisheries: (276) 783-4860; [thampton@dgif.state.va.us](mailto:thampton@dgif.state.va.us)